A70.E660
JACC March 9, 2010
Volume 55, issue 10A

IMAGING AND DIAGNOSTIC TESTING

EPICARDIAL ADIPOSE TISSUE AND CORONARY ARTERY PLAQUE CHARACTERISTICS

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 9:30 a.m.-10:30 a.m.

Session Title: CT Coronary Calcium and Noncoronary CT Applications
Abstract Category: CT Coronary Calcium and Noncoronary CT Applications
Presentation Number: 1038-229

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Background: Epicardial adipose tissue (EAT) has been implicated in the pathogenesis of coronary atherosclerosis. The association of EAT volume with type of coronary artery plaque on computed tomography angiography (CTA) has not been fully explored.

Methods: Coronary artery calcium (CAC) scoring and EAT volume measurement were performed on 214 consecutive patients (mean age 54±14 years) referred for coronary CTA. CAC was performed on non-contrast images; EAT volume and plaque characterization were assessed using contrast-enhanced CTA images.

Results: EAT volume correlated with age, height, body mass index (BMI), and CAC score. EAT volume was 62±33 ml to 63±22 ml, 98±47 ml, and 99±36 ml in patients with no, calcified, mixed, and non-calcified plaques, respectively ($p<0.001$). The EAT volume was significantly larger in mixed and non-calcified plaques than calcified or in the absence of plaques (Figure). The trend remained significant after adjustment for age, gender, race, BMI, smoking, family history of CAD, hypertension, dyslipidemia, and diabetes. In adjusted models EAT was an independent predictor of the presence of plaques with a non-calcified component, [exp(B)=3.849, $p<0.01$].

Conclusions: EAT volume is larger in patients with plaques with a non-calcified component. These data suggest that EAT may be a metabolically active tissue that favors the formation of new non-calcified atherosclerotic plaques.